



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

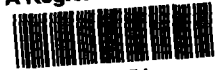
REGION 5

77 WEST JACKSON BOULEVARD

CHICAGO, IL 60604-3590

FEB - 9 1993]

EPA Region 5 Records Ctr.



230154

REPLY TO THE ATTENTION OF:

DATE:

SUBJECT: Request for Concurrence on the Explanation of Significant Differences for the Remedial Action at the Johns-Manville Superfund Site, Waukegan, Illinois

FROM: William Muno, Acting Director
Waste Management Division

Bertram C. Frey acting for
Gail C. Ginsberg, Regional Counsel
Office of Regional Counsel

TO: Valdas V. Adamkus
Regional Administrator

By this memorandum we are recommending that you authorize the change in the remedial action at the Johns-Manville site by executing the attached Explanation of Significant Differences (ESD).

This ESD was prepared in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. 9601 et seq., the National Contingency Plan (40 CFR Part 300), and Agency Policy. We have reviewed the attached documents and have concluded that the ESD is both legally and technically sufficient. As such, we believe that the implementation of the remedial measure is a proper exercise of your delegated authority.

Please feel free to contact either one of us should you have any questions.

Concur

for

Dale J. Bryson
Valdas V. Adamkus
Regional Administrator

2/9/1993

Date

Not Concur

Valdas V. Adamkus
Regional Administrator

Date

EXPLANATION OF SIGNIFICANT DIFFERENCES
for the
JOHNS-MANVILLE SITE
WAUKEGAN, ILLINOIS

INTRODUCTION

The Johns-Manville Site, located in Waukegan, Illinois, (Johns-Manville Site or the Site) operated as an asbestos manufacturing facility from the 1920's through the early to mid-1980's. The disposal area covers approximately 130 acres of the approximately 300 acres of land owned by Schuller International, Inc.

(Schuller), formerly the Johns-Manville Sales Corporation. For purposes of this document, however, Manville will be referred to instead of Schuller because Manville held title to and operated the facility during the majority of the time that the Site underwent investigation and remediation. Wastes containing primarily asbestos, and to a lesser extent, lead, chrome, thiram, and xylene have been deposited at the site since about 1922. In the mid-1980's, asbestos use was discontinued in the manufacturing processes. The Johns-Manville site was listed on the National Priorities List, 40 C.F.R. Part 300 (NPL), in December 1982. A Remedial Investigation/Feasibility Study (RI/FS) was completed in 1987 with a Subsequent Record of Decision (ROD) executed in June 1987. Negotiations between the United States Environmental Protection Agency (U.S. EPA) and Manville resulted in a settlement for design and construction of the remedy as specified in the ROD.

The construction of the remedy was completed on August 21, 1991. However, conditions discovered during construction necessitated several changes to the original remedy outlined in the ROD, including the following: discontinuation of construction of dikes on the north side of the industrial canal that were a part of the remedy specified in the ROD; alteration of the cover requirements for dikes and dike roadways that were specified in the ROD; alteration of the thickness and composition requirements for side slopes and dry waste piles that were specified in the ROD; remediation of additional areas on-site not mentioned in the ROD that were later found to contain asbestos; remediation of the sludge disposal pit and the miscellaneous disposal pit not provided for in the ROD that were later found to contain asbestos; and paving of a former boat storage area and non-functioning railway corridor, not mentioned in the ROD, that were later found to contain asbestos. Additionally, deed restrictions are needed to protect the integrity of the remedy.

Therefore, pursuant to the Comprehensive Environmental Response, Compensation, Liability Act (CERCLA) Section 117(c) and Section 300.435(c)(2)(i) of the NCP, the U.S. EPA is publishing this Explanation of Significant Differences (ESD). As required by Section 300.825(a)(2) of the NCP, this ESD will become part of the Manville Administrative Record which is available for review at the Waukegan Public Library located at 28 North County Street, Waukegan, Illinois and in the U.S. EPA Records Center located at 77 W. Jackson Blvd, Chicago, Illinois.

The information used in U.S. EPA's assessment is currently available at the above repository.

SUMMARY OF SITE HISTORY, CONTAMINATION, AND SELECTED REMEDY

Manville's asbestos disposal pit was designed to receive friable asbestos wastes from the manufacturing processes, and the miscellaneous disposal pit and the sludge disposal pit were designed to receive non-asbestos-containing materials from the manufacturing processes and that had been dredged from the on-site wastewater treatment system. The on-site wastewater treatment system, that was permitted by the State of Illinois in 1973, consists of a series of unlined ponds and waterways where fibrous materials in the facility's wastewater were settled over time. Deposited materials were periodically dredged and transported to and deposited in the miscellaneous and sludge disposal pits. In addition, asbestos-containing and miscellaneous waste materials were deposited in large piles at the north, south, and most of the western boundaries of the Site.

Airborne asbestos monitoring was conducted at the site in 1973 and 1982 by the Illinois Institute of Technology Research Institute and the U.S. EPA Field Investigation Team, respectively. The 1973 study did not provide conclusive evidence of asbestos air contamination, and the 1982 study indicated that concentrations of asbestos fibers in the 2.5 to 15 micrometer range were elevated on-site and downwind of the site and concentrations of asbestos fibers less than 2.5 micrometers were elevated on-site.

The Manville Remedial Investigation indicated the need to prevent releases of asbestos and PM_{10} (formerly Total Suspended Particulates) into the air. There was also a need for further air, ground water, and surface water monitoring at the site and a mechanism for remediation of any contaminants that are detected in concentrations that would present an endangerment to public health and the environment.

Different alternatives to address the site contamination problems were evaluated in the Manville Feasibility Study and after detailed analysis of the alternatives, a Proposed Plan was issued. After taking into consideration all public comments, the Regional Administrator signed a Record of Decision (ROD) on June 30, 1987. The remedy specified therein consisted of the following components:

- waste materials/soil in the inactive waste disposal areas of the site will be graded and covered with 24 inches of compacted non-asbestos-containing soil. The cover will consist of six inches of sand overlain by 12 inches of clay. Six inches of topsoil will be placed over the clay, and a vegetative cover will be grown and maintained.
- the asbestos disposal pit will be closed in June 1989 and provided with 24 inches of cover as described above.
- the miscellaneous disposal pit, sludge disposal pit, and wastewater treatment system will continue to operate; asbestos is no longer used in the manufacturing processes at the facility.
- any asbestos-containing material generated from reconstruction activities at the facility after June, 1989 will be disposed of off-site in an approved landfill.
- a soil cover monitoring program will be developed to ensure that no asbestos reaches the surface of the cover and becomes releasable to the air in the future.
- where feasible, one layer of nominal 12-inch thick riprap will be placed on the interior slopes of settling basins. Four-inch thick bedding material will be used to prevent erosion of soil beneath the riprap. All other exposed interior slopes will be provided with 24 inches of soil cover as described above.
- a contingency plan will be developed to ensure that no asbestos-containing sludge is dredged from the wastewater treatment system in the future.
- the north, west, and south slopes of the waste disposal area will be sloped with non-asbestos-containing soil to a ratio of two horizontal to one vertical and provided with 24 inches of soil cover with vegetation as previously described.
- a minimum of 24 inches of non-asbestos-containing soil will be placed on top of all dikes and dike roadways on-site. In addition, heavily used dike roadways will be provided with eight inches of compacted gravel, and lightly travelled dike roadways with four inches of compacted gravel.

- a ground water and surface water detection monitoring system will be established on-site to ensure that any contaminants that leach from the site are detected. The monitoring and reporting of results to U.S. EPA will continue for a minimum of 30 years. A contingency plan will be developed to ensure that appropriate remedial action will be taken if contaminant concentrations that would pose a threat to public health and the environment are detected.
- an air monitoring program will be established at the waste disposal area to determine the levels of asbestos, lead, TSP, and chromium in the air around the site. The monitoring and reporting of results to U.S. EPA will continue for a minimum of 15 years after the initiation of on-site construction activities for the remedial action. A contingency plan will be developed to ensure that appropriate remedial action will be taken if contaminant levels exceed the applicable air standards or health-based criteria.
- debris from the beach and southwest portion of the waste disposal area will be cleaned up.
- the eastern site boundary will be fenced to limit access.
- additional warning signs will be placed along the site perimeter.
- the small ditch connected to the south end of the east ditch will be closed.
- the active waste disposal areas (miscellaneous disposal pit, sludge disposal pit, and wastewater treatment system) will be sampled to verify Manville's claims that no asbestos has been deposited in the miscellaneous disposal pit, no asbestos-containing sludge is near the surface of the sludge disposal pit, and no hazardous wastes are entering the wastewater treatment system.
- the open area in the northeast corner of the miscellaneous disposal pit will be closed.
- peripheral ditches will be constructed to collect site run-off and channel it to the industrial canal.
- dikes will be constructed at the depressed area along the north side of the industrial canal to prevent industrial canal water from migrating off-site.

Negotiations between the U.S. EPA and Manville to design and construct the Site remedy resulted in a Consent Decree Settlement which was reached in December 1987. The State of Illinois was also a signatory to the Consent Decree, which was entered with the United States District Court for the Northern District of Illinois on March 18, 1988.

DESCRIPTION OF THE SIGNIFICANT DIFFERENCES AND THE BASIS FOR THOSE DIFFERENCES

Conditions discovered during the construction of the selected remedy necessitated six changes to the remedy outlined in the ROD, and deed restrictions are needed to ensure the integrity of the remedy. A description of these changes and the basis for these changes follows.

1. Remediation of Additional Areas

There were additional areas of the Site, not specified in the ROD, that were later identified as being contaminated with asbestos and, subsequently, were remediated. The first area was that surrounding the Industrial Canal, the Pumping Lagoon, and Eastern Site boundary. After trees near these areas were cleared during initial construction, waste products and materials resembling the sludge from the wastewater treatment system became visible. Representative samples collected in these areas in February 1990, revealed asbestos-containing material (ACM) located at or near the ground surface. Additional on-site sampling revealed that ACM was located at the ground surface of three additional areas--the borrow pit roadway, the boat storage area, and the non-functioning railway corridor. Manville submitted three additional work plans (the Second Work Plan Supplement, Second Work Plan Supplement-Amendment A and Third Work Plan Supplement) to address these additional areas of contamination. These additional work plans each contained a schedule for completion of remedial activities and were reviewed and approved by U.S. EPA and the Illinois Environmental Protection Agency (IEPA). Final remedial construction was completed on August 21, 1991.

The basis for remediating these additional areas was the same as that for remediating the areas originally designated in the ROD--to manage the risk to human health, safety, and the environment from friable asbestos. ACM was located at the ground surface and was, therefore, releasable to the air. All remediation of the additional areas was done consistent with the ROD - dry waste areas were covered with 24 inches of clean soil cover, with vegetation; areas at the edge of settling ponds/waterways were provided with one layer of nominal 12 inch thick riprap; and roadways were remediated consistent with the U.S. EPA-approved amended treatment requirements outlined below.

2. Dikes on the North Side of the Industrial Canal

The ROD specified that dikes will be constructed at the depressed area along the north side of the industrial canal. These dikes were not constructed. The basis for this difference is that the Illinois Department of Conservation (IDOC) expressed opposition to the construction of these dikes after the ROD was signed. The IDOC, which is responsible for administering the Illinois Beach State Park which borders the Manville facility on the north, stated that construction of the dikes would alter the existing water balance and could flood this area of the Illinois Beach State Park. This flooding could harm some endangered plant species located in the area. Since the initial reason for constructing the dikes was to prevent potential harm to the Illinois Beach State Park, U.S. EPA dropped this work provision from the selected remedy.

3. Roadway Thickness

The ROD required placement of a minimum of 24 inches of non-asbestos-containing soil on top of all dikes and dike roadways on-site and an additional eight inches of compacted gravel on heavily used dike roadways (Class I) and four inches of compacted gravel on lightly traveled dike roadways (Class II). What was actually constructed was a minimum 12-inch thick non-asbestos-containing sand layer overlain by a 12-inch thick compacted gravel layer on heavily traveled dike roadways (12/12 system), and a minimum 14-inch thick sand layer overlain by a 10-inch thick compacted gravel layer on lightly traveled dike roadways (14/10 system). The basis for this difference is that the newly devised cover systems require less material than those specified in the ROD, but provide full cover thickness and protection from freeze/thaw up migration equivalent to that provided by the 24-inch soil cover specified in the ROD.

4. Sludge Disposal Pit and Miscellaneous Disposal Pit

Remediation of the Miscellaneous Disposal Pit (MDP) and the Sludge Disposal Pit (SDP), although not specified in the ROD, was later required as part of the remedy. The ROD states that the MDP and SDP will be sampled to verify Manville's claims that no asbestos has been deposited in the MDP and no asbestos-containing sludge is near the surface of the SDP. The ROD is silent on what to do if asbestos is found in these pits. Sampling results did indicate the presence of asbestos at and near the surface of the MDP and SDP. Therefore, U.S. EPA required Manville to cover these pits with 24 inches of soil cover, consistent with the

the requirement for all dry waste areas. Manville decided to close the SDP, so the SDP was provided with a vegetative cover. Since the MDP is still active, it was not provided with a vegetative cover, but the asbestos-containing layer has since been covered over with non-asbestos-containing plant wastes. The basis for this difference from the ROD is simply that the ROD did not specify what to do if ACM was found at the surface of the MDP and SDP; therefore, action consistent with the rest of the ROD was taken once asbestos was discovered.

5. Cover Composition for Side Slopes and Dry Waste Piles

The composition and thickness of the cover requirements for side slopes and dry waste piles were changed from the criteria stated in the ROD. The ROD required that dry waste areas with slopes greater than 20% receive a 24-inch cover that consisted of a bottom six-inch sand layer overlain by 12 inches of clay and six inches of topsoil. New cover requirements were selected because the original cover as specified in the ROD may not have been stable at slopes greater than 20%, and could have lead to sloughing. The 26-inch clay/topsoil cover was analyzed and found to be equivalent to the 24-inch sand/clay/topsoil cover in terms of protection from freeze/thaw up migration.

Additionally, the ROD stated that dry waste areas were to be provided with a 24-inch soil cover, consisting of six inches of sand overlain by 12 inches of clay and six inches of topsoil. What was constructed was a 24-inch cover consisting of six inches of sand overlain by 15 inches of clay and three inches of topsoil. U.S. EPA allowed this change because the new cover requirements were found to be as protective as the original requirements, and the new requirement for three inches of topsoil would be adequate in promoting vegetative growth.

6. Paving

Remediation by paving, although not specified in the ROD, was later required as part of the remedy. During construction, asbestos was found at and near the ground surface of a former boat storage lot that was located on the southwestern edge of the Site, and near the non-functioning railway corridor. These areas were covered with a minimum six inch compacted gravel layer overlain by a minimum two-inch thick bituminous pavement cover. This cover was considered to provide equivalent protection to the 24-inch soil cover with vegetation and allowed future use of the area by potential tenants. Due to the decreased thickness (eight inches) of this cover, rigorous operation

and maintenance requirements were adopted to ensure the integrity of the bituminous pavement.

7. Deed Restrictions

No provisions for deed restrictions were included in the ROD. Deed restrictions are necessary to prevent interference with the operation and long-term maintenance of the remedy for the Site. Deed restrictions will ensure the integrity of the constructed remedy and are, hereby, required under this ESD.

SUPPORT AGENCY COMMENTS

The State of Illinois concurs with this ESD.

AFFIRMATION OF THE STATUTORY DETERMINATIONS

Based upon information discovered during remedial construction and the need for deed restrictions, changes have been made to the remedy selected in the ROD. The U.S. EPA and IEPA believe that the remedy not only remains protective of human health and the environment, but is and has been enhanced by remediating additional areas of the site and preserving the integrity of the remedy. The changes comply with federal and state requirements that were identified in the ROD as applicable or relevant and appropriate to this remedial action. The revised remedy utilizes permanent solutions and alternate treatment technologies to the maximum extent practicable for the Manville Site and is cost effective.

FIGURE

ADDITIONAL AREAS REMEDIATED

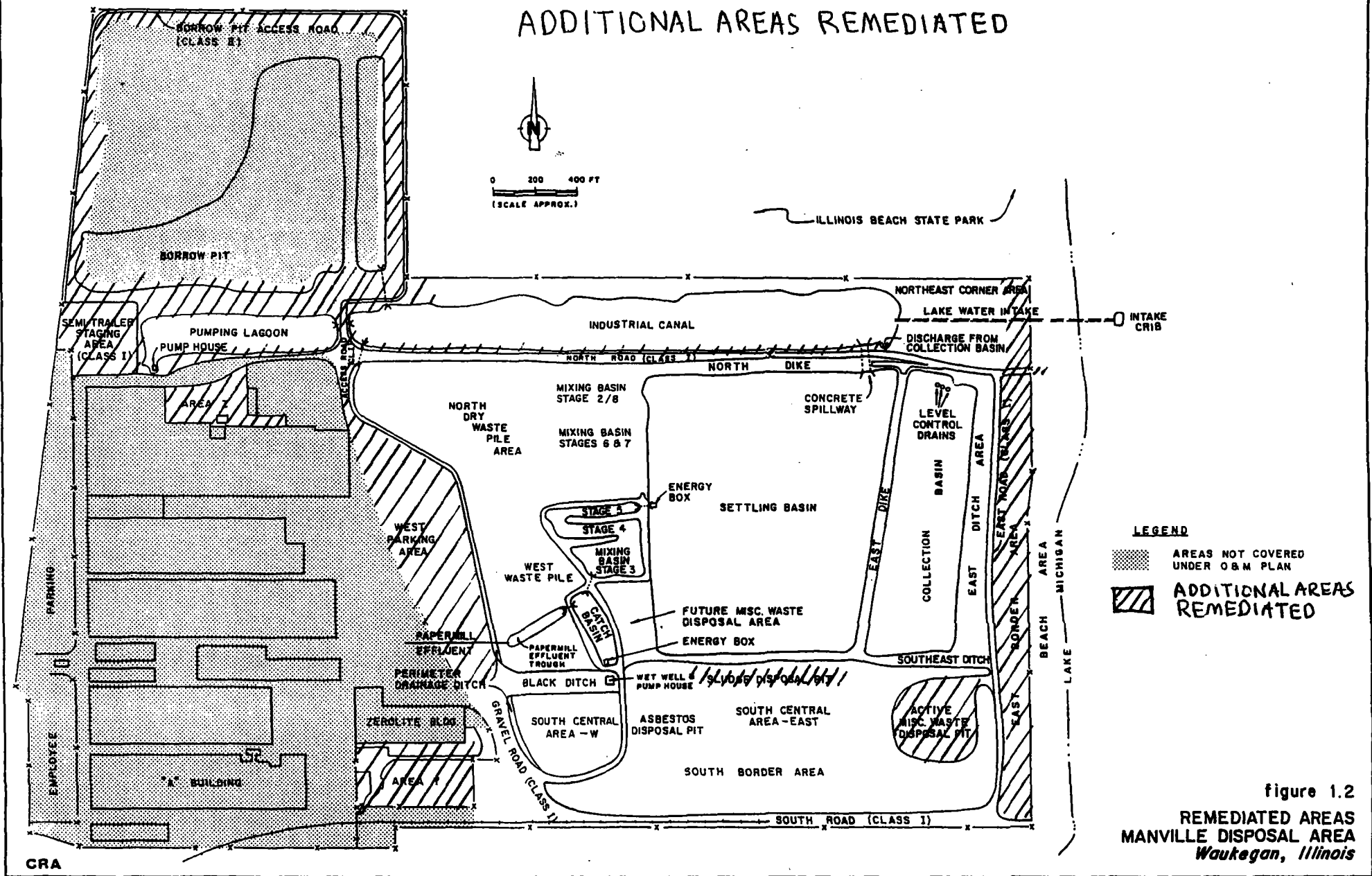


figure 1.2
REMEDIED AREAS
MANVILLE DISPOSAL AREA
Waukegan, Illinois

JOHNS - MANVILLE
UPDATE - ADMINISTRATIVE RECORD

PAGES	DATE	TITLE	AUTHOR	RECIPIENT
100+	3/18/88	Remedial Action Consent Decree	EPA/Manville	N/A
27	4/21/88	Remedial Work Plan Comment Letter	Brad Bradley U.S. EPA	Marvin Clumpus Manville
3	10/18/88	Revised Amended Remedial Work Plan Comment Letter	Kurt Niebergall IEPA	Bradley
4	4/17/89	Correspondence	John Zackrison Kirkland & Ellis	Larry Johnson U.S. EPA
18	4/27/89	Work Plan Supplement	Conestoga Rovers & Associates (CRA)	N/A
2	4/27/89	Correspondence	Richard Shepherd CRA	Bradley/Johnson
2	5/19/89	Work Plan Supplement Comment Letter	Neibergall	Bradley
21	3/26/90	Split Sample Results for 2/7/90 Sampling Event	CC Johnson and Malhotra	N/A
36	4/11/90	Cover Letter and Attachment Results for 2/7/90 Sampling Event	Bradley	Shepherd
4	7/2/90	Second Work Plan Supplement Comment Letter	Bradley	Shepherd
23+ Drawings	7/31/90	Second Work Plan Supplement (SWPS)	CRA	N/A
1	7/31/90	Transmittal Letter	Shepherd	Bradley
2	8/2/90	Letter - SWPS Changes	Shepherd	Bradley

PAGES	DATE	TITLE	AUTHOR	RECIPIENT
1	8/3/90	SWPS Approval Letter	Bradley	Shepherd
2	10/24/90	Letter - SWPS Modifications	Shepherd	Bradley
1	11/7/90	SWPS - Amendment A Comment Letter	Bradley	Shepherd
2 + Drawings	11/13/90	SWPS - Amendment A and Transmittal Letter	Shepherd	Bradley
1	11/27/90	SWPS - Amendment A Approval Letter	Bradley	Shepherd
2	12/28/90	Letter - SWPS - A Amendment Modifications	Shepherd	Bradley
1	6/6/91	Transmittal Letter	Shepherd	Bradley
2	6/20/91	Third Work Plan Supplement Comment Letter	Bradley	Shepherd
21	6/27/91	Third Work Plan Supplement (TWPS)	CRA	N/A
1	6/27/91	Transmittal Letter	Shepherd	Bradley
1	7/2/91	TWPS Approval Letter	Bradley	Shepherd
4	1/3/89	Letter - Proposed Consent Decree Modifications	Zackrison	Johnson
1	7/22/91	Transmittal Letter	Shepherd	Bradley
100+	10/91	Operation and Maintenance (O&M) Manual	CRA	N/A
1	10/11/91	Transmittal Letter	Shepherd	Bradley
4	10/18/91	O & M Manual Comment Letter	Neibergall	Bradley

PAGES	DATE	TITLE	AUTHOR	RECIPIENT
3	11/15/91	Letter - O&M Manual Revisions	Shepherd	Bradley
2	12/2/91	As-Built Plans Comments Letter	Neibergall	Bradley
1	12/11/91	O & M Manual Approval Letter	Bradley	Shepherd
13	12/30/91	Johns-Manville Closeout Report	U.S. EPA	N/A
1	2/11/92	Letter re: Delisting	Bruce Ray, Manville	Cynthia Kawakami, U.S. EPA
1	2/12/92	Letter re: Corporate Name change	Dale Wheeler, Schuller	Bradley
9	2/18/92	Final Construction Report Comment Letter	Bradley	Shepherd
2	4/13/92	Transmittal letter	Shepherd	Bradley
2	7/7/92	Second Draft Final Construction Report Comment Letter	Bradley	Shepherd
2	9/28/92	Transmittal Letter	Shepherd	Bradley

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OFFICE OF REGIONAL COUNSEL